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CORRES. CONTROL
OUTGOING LTR NO

DOE ORDER #
93RF 13828

DIST.	LTR	ENC
AMARAL, M.E		
BENEDETTI, R.L	X	
BENJAMIN, A		
BERMAN, H.S		
BRANCH, D.B		
CARNIVAL, G.J.		
COPP, R.D.		
DAVIS, J.G.		
FERRERA, D.W.		
HANNI, B.J.		
HARMAN, L. K		
HEALY, T.J.		
HEDAHL, T		
HILBIG, J.G.		
KIRBY, W.A.		
KUESTER, A.W.		
MANN, H.P.		
MARX, G.E.		
McDONALD, M.M.		
McKENNA, F.G		
MONTROSE, J.K.		
MORGAN, R.V.		
POTTER, G.L.		
PIZZUTO, V.M.		
RILEY, J.H		
SING, T.L.		
SANDLIN, N.B		
SETLOCK, G.H.		
STEWART, D.L.		
SULLIVAN, M.T.		
SWANSON, E.R.		
WILKINSON, R.E.		
WILLIAMS, S. (ORC)		
WILSON, J. M.		
YANT, R.B.		
[illegible]	X	
[illegible]	X	
[illegible]	X	
[illegible]	X	
CORRES CONTROL	X	X
ADMIN RECORD		
TS/T130G		
AEFIC		

CLASSIFICATION:

UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE

DOCUMENT CLASSIFICATION REVIEW WAIVER PER CLASSIFICATION OFFICE

DATE

REPLY TO RFP CC NO:

ACTION ITEM STATUS
PARTIAL/OPEN
☐ CLOSED
APPROVALS:

EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

November 10, 1993

93-RF-13828

F. R. Lockhart
Environmental Restoration Division
DOE, RFO

DECISION DOCUMENT: INDUSTRIAL VACUUM LOADER FOR POND REMOVALS - SRK-246-93

Introduction

The current baseline for emptying the Solar Ponds is to design and install a new pipeline from the B South and C ponds and pump the sludge and salt into new polyethylene tanks on the 750 pad. Even though the tanks are scheduled to start arriving in December, a pumping scheme does not support DOE's schedule for early emptying of the ponds[1]. Recently, an alternative to pumping that involves using an industrial vacuum loader truck instead of a pipeline has been studied in the hope that significant cost and schedule improvements can be realized.

Summary and Conclusions

The industrial vacuum loader concept is technically feasible for both ponds and the clarifier, will reduce cost by about $900,000, and improve the schedule for emptying the ponds by about six months. With acceptable weather and immediate approval by DOE, operations could start in early December and finish in January or February, 1994. The concept offers many other advantages including: using less permitted storage space, generating less secondary waste, and allowing more flexibility for operations during cold weather. We recommend this approach be adopted immediately. Per your verbal concurrence today, we will prepare an emergency Baseline Change Proposal and submit it to the board.

Discussion

The current baseline for emptying the Solar Ponds includes designing and installing a new pipeline from the pond area to the 750 pad as well as several pumps and tanks to support the operation. Basically, the sludge would be removed from the ponds with a submersible pump which discharges to a conical bottom tank where the sludge is settled prior to being pumped through a booster pump to the pad. This baseline requires substantial time and cost for design and construction as well as significant time for procedure writing, readiness assessment, and training. Using this approach, emptying of the B pond is scheduled to be complete on July 6, 1994 based on our current working schedule.

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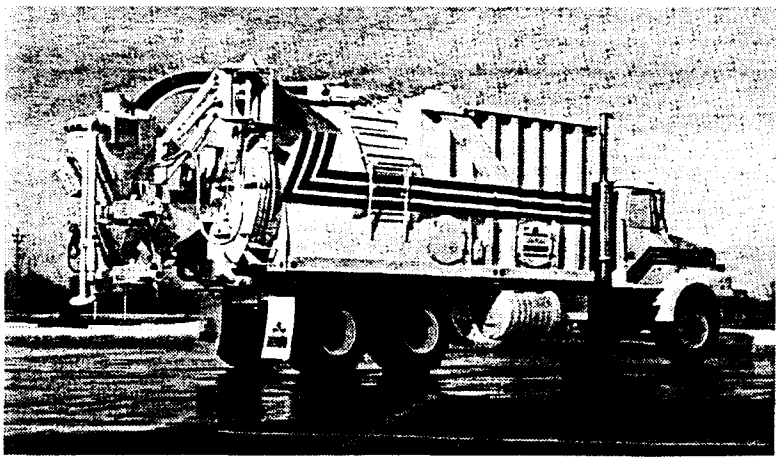
[1] We have been told that DOE has established a Special Emphasis area in the upcoming CPAF Plan that schedules B Pond empty on December 31, 1993 and C Pond empty on March 31, 1994.



The industrial vacuum loader alternative includes hiring a DOT-licensed hazardous waste transport subcontractor to suck out the ponds using a high-powered vacuum truck which would drive back and forth to the pad area where it would be pumped out into polyethylene tanks. The subcontractor would only operate his own equipment. EG&G would operate all Government equipment and move all lines. Suitable vacuum trucks exist and several project team members witnessed a demonstration of the Supersucker™ truck in the accompanying photo. This truck is quite capable of emptying our ponds. In addition, eleven firms that transport hazardous waste were invited to an informational session and tour of the pond area. After being briefed on the conceptual vacuum transport plan, eight of the firms stated they were capable of removing and transporting the sludge and expressed an interest in bidding on such a contract.

Several issues concerning the new concept are discussed in the following paragraphs.

Cost Benefit. Comparative costs for the current baseline vs. the vacuum loader are summarized in the table. Costs that are common to both options are not itemized here. The vacuum loader concept has a $900,000 advantage even assuming that two of the expensive trucks cannot be decontaminated and RFP will have to buy them at the end of the job. There is some difference of opinion over how likely it is that we will not be able to decontaminate the trucks. The trucks have several features that are difficult to decontaminate including the discharge pump, baghouse and filters, and final filter. On the other hand, good success has been obtained in decontaminating drill rigs and other equipment used by remediation subcontractors in the pond area.

Item	Current Baseline	Vacuum Loader
Title II Design	$311K	$25K
Title III Engineering	$50K	$25K
Construction	$598K[2]	0
Operations	0[3]	$130[4]K
Poly Tanks Needed	$1,800K	$1580K
Purchase of vacuum truck	0	$400K
D&D	$290K	0
TOTAL	$3,049K	$2,160K

[2] Includes $38K for pumps and piping. However, most of the equipment already exist on plant-site.
[3] Does not include Waste Operations personnel since costs would be about the same in either case.
[4] Includes vacuuming both B and C ponds.

Schedule Benefit. The current working schedule shows B pond empty on July 6, 1994. This schedule is based on design in December and January, construction start in early February and operations starting in the middle of May. The vacuum loader schedule anticipates the subcontract awarded in November with B pond vacuuming and transferring being completed in January or February, depending on the weather. This schedule is based on one shift per day with two vacuum trucks pumping about 20,000 gallons total per day.

Protection For Liner. A technical issue that must be solved is how to prevent damage to the B pond 45 mil Hypalon™ liner. (C pond has an asphaltic concrete liner that is not a problem.) It is felt that the selected vendor will have techniques for preventing damage to the liner. We expect that many of the ponds and lagoons they empty have similar liners.

Truck Off-Loading. Some of the vacuum trucks have very powerful discharges that require 4" lines. These trucks may overwhelm the limited vent capability and pressure capability of our tanks. This is an engineering problem but several potential solutions exist. The exact solution will depend on the specific equipment of the selected vendor. Originally there was a concern about pumping the sludge through a long hose into the tent. Current information is that the vacuum truck will fit into the tent and will be able to park directly beside the tank being filled. However, engineering analysis of allowable floor loading in the tents will need to be performed. The weight of the truck may also be a problem near the ponds.

Truck Loading. There are several details related to the movement of sludge to the vacuum hose and/or the movement of the hose to the sludge. The coffer dam concept that consolidates the sludge in one end of B South pond should facilitate sludge loading. The pros and cons of the various approaches have to be studied. Personnel safety during cold-weather operation will also have to be addressed.

Truck Maintenance/Decontamination. There are questions concerning any repairs needed by the vacuum truck. Who will do them? Whose tools and equipment will be used? Where will this work be done? In general, it is felt that EG&G should provide the facilities while the contractor should provide the tools and equipment. Proper training for both the truck operator and mechanic will be provided by EG&G.

Procedures. The procedures needed for an industrial vacuum loader operation are different than those currently being prepared for the pumping/piping scenario. Even though the number of procedures required will be less, additional procedure writers may be required to prepare the new procedures on an expedited schedule. It is assumed that the truck operating procedure will be provided by the contractor and all procedures for moving and consolidating sludge will be written by EG&G.

Contingency Plan. It is recognized that the contingency plan to deal with a leaky truck is much different than the current plan for the pipeline concept. A new plan will have to be prepared.

If you have any questions, please contact Joe Mellen at extension 8607.

A R Keith

S. R. Keith
Director
Solar Pond Projects
EG&G Rocky Flats, Inc.

JBM:bep

Orig. and 1 cc - F. R. Lockhart